

## LSm5 siRNA (m): sc-75710

### BACKGROUND

Sm and Sm-like (LSm) proteins form donut-shaped heptameric complexes that are involved in various steps of RNA metabolism. LSm proteins facilitate RNA protein interactions and structural changes that are required during ribosomal subunit assembly. LSm proteins contain a Sm sequence motif which has two regions separated by a linker of variable length that forms a loop. LSm5, also known as YER146W, is a 91 amino acid protein belonging to the snRNP Sm family. Localized to the nucleus, LSm5 has been found to play a role in the formation and function of the U6 snRNP. Specifically, LSm5 binds to the 3' end of U6 snRNA and facilitates U4/U6 duplex formation.

### REFERENCES

1. Salgado-Garrido, J., Bragado-Nilsson, E., Kandels-Lewis, S. and Seraphin, B. 1999. Sm and Sm-like proteins assemble in two related complexes of deep evolutionary origin. *EMBO J.* 18: 3451-3462.
2. Achsel, T., Brahms, H., Kastner, B., Bachi, A., Wilm, M. and Lührmann, R. 1999. A doughnut-shaped heteromer of human Sm-like proteins binds to the 3'-end of U6 snRNA, thereby facilitating U4/U6 duplex formation *in vitro*. *EMBO J.* 18: 5789-5802.
3. Friesen, W.J. and Dreyfuss, G. 2000. Specific sequences of the Sm and Sm-like (Lsm) proteins mediate their interaction with the spinal muscular atrophy disease gene product (SMN). *J. Biol. Chem.* 275: 26370-26375.
4. Eystathiou, T., Peebles, C.L., Hamel, J.C., Vaughn, J.H. and Chan, E.K. 2002. Autoantibody to hLSm4 and the heptameric LSm complex in anti-Sm sera. *Arthritis Rheum.* 46: 726-734.
5. Ingelfinger, D., Arndt-Jovin, D.J., Lührmann, R. and Achsel, T. 2002. The human LSm1-7 proteins colocalize with the mRNA-degrading enzymes Dcp1/2 and Xrn1 in distinct cytoplasmic foci. *RNA* 8: 1489-1501.
6. Lehner, B. and Sanderson, C.M. 2004. A protein interaction framework for human mRNA degradation. *Genome Res.* 14: 1315-1323.
7. Online Mendelian Inheritance in Man, OMIM™. 2005. Johns Hopkins University, Baltimore, MD. MIM Number: 607285. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

### CHROMOSOMAL LOCATION

Genetic locus: Lsm5 (mouse) mapping to 6 B3.

### PRODUCT

LSm5 siRNA (m) is a target-specific 19-25 nt siRNA designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see LSm5 shRNA Plasmid (m): sc-75710-SH and LSm5 shRNA (m) Lentiviral Particles: sc-75710-V as alternate gene silencing products.

### PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.

### STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNases and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

### APPLICATIONS

LSm5 siRNA (m) is recommended for the inhibition of LSm5 expression in mouse cells.

### SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10  $\mu$ M in 66  $\mu$ l. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

### GENE EXPRESSION MONITORING

LSm5 (G-5): sc-398656 is recommended as a control antibody for monitoring of LSm5 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

### RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor LSm5 gene expression knockdown using RT-PCR Primer: LSm5 (m)-PR: sc-75710-PR (20  $\mu$ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

### RESEARCH USE

For research use only, not for use in diagnostic procedures.